(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 7 April 2005 (07.04.2005)

PCT

(10) International Publication Number WO 2005/030186 A2

(51) International Patent Classification7:

A61K 31/00

(21) International Application Number:

PCT/US2004/023498

(22) International Filing Date: 22 July 2004 (22.07.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 60/490,029

28 July 2003 (28.07.2003) US

- (71) Applicant (for all designated States except US): UNI-VERSITY OF MARYLAND [US/US]; 520 West Lombard Street, Baltimore, MD 21201-1627 (US).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): KARAOLIS, David, K., R. [US/US]; Baltimore, MD 21210 (US).
- (74) Agents: BROWDY, Roger, L. et al.; Browdy and Neimark, P.L.L.C., Suite 300, 624 Ninth Street N.W., Washington, DC 20001-5303 (US).

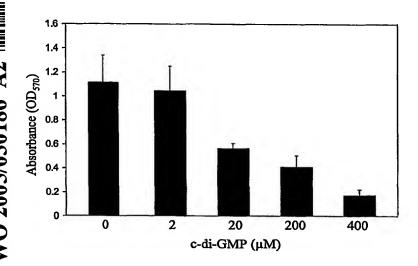
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

 without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHOD FOR ATTENUATING VIRULENCE OF MICROBIAL PATHOGENS AND FOR INHIBITING MICROBIAL BIOFILM FORMATION



(57) Abstract: The present invention relates to the use of the cyclic dinucleotide c-di-GMP and cyclic dinucleotide analogues thereof in a method for attenuating virulence of a microbial pathogen or for inhibiting or reducing colonization by a microbial pathogen. This method further inhibits microbial biofilm formation and is capable of treating bacterial infections. The microbial colonization or biofilm formation inhibited or reduced may be on the skin or on nasal or mucosal surface. The microbial colonization or biofilm formation inhibited can also be on the surfaces of medical devices, especially those in close contact with the patient, as well on the surfaces of industrial and construction material where microbial colonization and biofilm formation is of concern.

